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Scholl et al.

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[54] **HOT MELT THERMOPLASTIC ADHESIVE FOAM SYSTEM**

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[58] **Field of Search** ..... 264/50, 54, 321; 261/DIG. 26, 28, 84, 93; 259/95; 222/146 HE, 251; 156/78, 79, 286, 500, 578; 425/4 C; 428/310, 158; 219/10, 65

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[57] **ABSTRACT**

A novel method and apparatus are disclosed for manufacturing a novel adhesive product. The product is a pair of substrates adhered together by compressed hot melt adhesive foam. The foam is created by first mixing a chemical blowing agent, such as powdered azodicarbonamide, into the solid hot melt adhesive at a temperature below the decomposition temperature of the blowing agent. Subsequently, the solid adhesive and powdered blowing agent are heated to a temperature above the melting temperature of the solid adhesive and above the decomposition temperature of the blowing agent while confining the molten mixture under pressure in order to force the gas generated by the decomposition of the blowing agent into solution with the liquid adhesive. The liquid adhesive is subsequently dispensed at atmospheric pressure with the result that the gas is released from the solution and becomes entrapped in the adhesive to form a homogenous closed cellular adhesive foam.

14 Claims, 10 Drawing Figures